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TRAILSIDE INTERDEPENDENCE

THE NATURE TRAILS AND TRAILSIDE MUSEUM
AT BEAR MOUNTAIN, N. Y.

WILLIAM H. CARR
Assistant Curator, Department of Public Education
Chief Naturalist, Palisades Interstate Park

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TRAILSIDE INTERDEPENDENCE

Being an account of the building of a Trailside Museum exhibit to show that a state of true independence does not exist in the world of nature

REPORT FOR 1932

by

WILLIAM H. CARR

PHOTOGRAPHS BY THANE BIERWERT

Department of Public Education
THE AMERICAN MUSEUM OF NATURAL HISTORY
77th STREET AND CENTRAL PARK WEST
NEW YORK CITY

"Who has seen the wind?
Neither you nor I;
But when the trees bow down their heads
The wind is passing by."

—C. G. Rossetti.

FOREWORD

The Bear Mountain Trailside Museum, during the season of 1932, functioned in other ways than purely as a natural history educational and recreational institution. Many individuals who walked along the Nature Trails, entered the Museum, and chatted at the Crafthouse were having their only outing of the year. Their forty-mile journey on the Hudson River represented a glorious breathing space amid days of toil and worry. It was the privilege of the staff to talk with these people and to make them happy in an activity that pleasurably filled the hours in a place of beauty. The depression-weary public were served by hearty encouragement to enjoy leisure time intelligently, and to return home with thoughts of inspiration and with the realization that in Nature lies a cure for many ills other than physical.

The Trailside Museum was initiated by the American Association of Museums, and through a grant of the Laura Spelman Rockefeller Memorial, funds were provided for the Museum building which was erected under the direction of Major William A. Welch. The fifty-seven-acre area for the Nature Trails and building was provided by the Commissioners of the Palisades Interstate Park. At the request of the Commissioners, the American Museum of Natural History undertook the direction and operation of the project. Thus, since 1927, the maintenance and operation of the Nature Trails and of the Trailside Museum has been a joint endeavor of the American Museum and the Commissioners of the Park.

Through the generosity of one of its trustees, Mr. Felix M. Warburg, the American Museum has provided for the entire personnel and the major part of maintenance expenses. The Park Commissioners have cooperated in the educational undertaking by the erection of two cabins to house the staff, and have aided in the trail building and other construction work generally.

From the beginning, Mr. William H. Carr, Assistant Curator, Department of Education of the American Museum, has been Chief-of-Staff, and the official representative at Bear Mountain. He and his associates, through faithful, energetic and efficient service, and through their untiring devotion to the work, have made an outstanding contribution to nature education.

Dr. George H. Sherwood, Director,
American Museum of Natural History,
77th Street and Central Park West,
New York City.

ACORN TRAIL VISTA

A cedar stairway leads downward to the Acorn Trail valley. This heavily wooded section, on the cliffs above the Hudson River, is the most beautiful spot upon the entire Nature Trail Area. It is reserved for the use of classes and individuals especially interested.

TRAILSIDE INTERDEPENDENCE

NOT everyone is privileged to write a report with the assistance of a tame, exceedingly likable, black crow standing upon one corner of the pad watching the pencil as it travels back and forth. Jim has been so intimately associated with this and last season's activity, that it is only fitting to have him supervise this account; to have him reach down occasionally with inquiring beak to test the words as they appear.

Jim is simply one of the group helping with the operation of the Nature Trails and Trailside Museum. His experiences with individual visitors, and with large crowds, parallel our own. As he constantly adapts his ways to an ever changing environment, so do we seek to develop new means and concrete methods of bringing to the public added and more effective types of nature exposition, both indoors and out.

Time and Change

For a long time we have endeavored to find some means of demonstrating that the endless, *separate* phases of nature are in reality not as widely divorced as they seem; that the oak tree is a larger relative of the daisy, the chipmunk a cousin of the beaver, and that without rock, soil, water, sun, oxygen and other things neither plants nor animals could exist. It has been comparatively simple to tell individual stories, to label insects, snakes, ferns, grasses and minerals. We have sought to invent a way of visually informing the public that all of these diverse objects are truly a part of one inconceivably magnificent and incredibly harmonious whole.

Visitors have apparently been satisfied with interesting exhibits that were merely units without connecting links. Nevertheless, it was evident that the great majority failed to grasp the scheme of things as we wished. They did not associate birds with reptiles or soil with rocks, regardless of the fact that some of our labels and diagrams told of these relationships. Our desire was to have guests realize that, in this world at least, there is no state of complete independence; that every living creature and plant is in some degree dependent upon and related to other things. During the present season, therefore, we have built a device, largely of living objects, to aid in disseminating this information in a definite though inspirational way. It involves a philosophical consideration in addition to one of pure natural science. Although endless in scope and unlimited in regard to ultimate possibilities of extension, we have called it simply:

THE STORY OF INTERDEPENDENCE

It is the story of a cumulative idea that has been expressed in tangible form. If, in the telling, it provides a practical demonstration of applied psychology—well, that is another story! Men, women and children have a marked preference for dramatic accounts that are rounded in detail with solid, easily grasped beginnings and conclusive endings. This is human nature or sound psychological reaction, or what you will. Maxwell Bodenheim has said that "psy-

"Ghosts"

INTERDEPENDENCE TABLES

From right to left the plants and animals parade across the window. Twenty minutes is the average time spent here by visitors who are interested in the story.

chology is a rubber stamp pressed upon a slippery, dodging ghost." We have been pursuing many of these ghosts for six years and have discovered that it is possible to catch some of them though they do slip and dodge. Whenever we *have* succeeded, we find that, like others of their ilk, they are not ghosts at all! They are solid, substantial, though sometimes timid and often diffident entities that invite more intimate understanding. We never employ rubber stamps to further the acquaintance.

There is nothing of a stereotyped or routine character in the *Story of Interdependence* in the Bear Mountain Trailside Museum. It is direct

and stimulating in its appeal. It has grown to have an increasingly important bearing upon our trail and museum work and, eventually, will influence practically all of our nature-lore teaching methods wherein background material is concerned.

The Exhibit Itself

After walking over at least several acres of the Nature Trail, one enters the Trailside Museum and there, at the left of the doorway, views the interdependence exhibit. Perhaps the best way to describe the display briefly is to employ the accompanying labels. The first one, in the form of a poster, is given an especially constructed frame to attract initial attention. It reads:

> There is a Very "Big Story" Here
>
> You may "read" the story in about twenty minutes. It would require twenty years, and more, to understand all the relationships.

Although this last advice seems discouraging, it proves just the opposite, for it presents a challenge that is usually accepted. The collections of exhibits are arranged upon three long tables. The first is a colorful painting of the sun. The caption is:

> *The Sun*
>
> Without *Sun rays* there could be no life upon the Earth. The Sun provides needed *Warmth* and *Energy*. It aids chemical action necessary for the growth and development of all life, both plant and animal.

Next in sequence is a picture representing a lifeless world with unweathered rocks, tumbled waters, a misty sky and golden sun. The painting is an imaginative one suggesting a fantastic, strange scene of a day many millions of years ago. The sign below says:

> *Air and Water*
>
> Water (or moisture) existing in sea, stream, cloud and elsewhere is absolutely essential to all living things. Oxygen in the "air" and in other places is another necessity in the maintenance of life.

Underneath the sign are two bottles designed to carry on through visual suggestion the idea expressed by the painting. One bottle is empty. Its label reads:

> *Just "Air" (Oxygen+)*
> Oxygen is a tasteless, odorless and colorless gas forming one-fifth of the atmosphere. It enters every form of life. We inhale it with every breath.

The other bottle is filled with water and its story is told in this way:

> *Water*
> Water is composed of two parts hydrogen and one part oxygen (H_2O). Even water contains life-giving oxygen. Plants and animals must have both oxygen and moisture. Could you "do" without either one?

It is surprising to observe how many visitors solemnly hold up both bottles, read the labels and glance at the picture as though never before had they considered the subject in relation to themselves. Reintroductions are useful sometimes and recall biology lessons of years gone by. Frequently we would overhear comments such as these:

"We had that in biology class. Do you remember?"

"I guess Man didn't invent so many gases after all when you stop to think of oxygen and hydrogen."

The first two little exhibits serve as an introduction to all that comes after. The next step, also illustrated with a painting, shows a forbidding rocky mass partially disintegrated to form soil. It is also thought-provocative and is labeled:

> *Soil*
> Before soil may be formed from rocks, there must be some co-operation from the agents of heat, cold, gravity, chemical action, water and oxygen. Many plants depend upon soil and soil content for food and anchorage. In the background, of course, we have the sun.

Now we arrive at the interesting point in our exhibit, the place where life begins. From here on, especially, we are able to make frequent reference to practically every other display within the museum

and upon the trails. When we label and describe different types of soil along the paths and out-of-doors, we may advise the label readers to visit the museum where the interdependence exhibit will offer a more comprehensive idea of things. To this end we have placed soil samples in bottles, directly in front of our *Soil* picture. Also we have gathered three living plants in containers to show different soil preferences. There is field grass, local cactus and a fern—all labeled as to soil requirement. In the bottles are humus, sandy, and mixed soils.

Acorn Trail Interlude

There are splendid demonstrations of nearly everything connected with this introductory display along the new Acorn Trail we constructed this year. Before telling of the plant and animal section of the interdependence exhibit, it might be well to go into the open and follow this single file path to see how museum and trail may be closely correlated. Our principal aim, after all, is to encourage visitors to feel at ease in the woodland by endeavoring to acquaint them with woodland objects. It is difficult to be at home among strangers.

All sorts of relationships are indeed closely interwoven beside the shady, cool Acorn Trail that runs along the Hudson River cliffs over a rounded hill, through a heavily forested valley, and back to the starting point. Here are no standard labels. Instead there are small, lettered numbers placed upon stakes, beside trees, rocks, ferns, and flowers. He who wanders along this trail is guided by hand-written sheets of paper containing information about the numbered objects. (Mimeographed sheets will be necessary next year.) It is possible to have one set of papers for general facts and another for questions.

At one beautiful spot where a huge, symmetrical red oak stretches upward for more than eighty feet, there is a small spring of clear, cold water—the kind of spring one dreams of when traveling in arid regions. Earlier in the season we placed a log, stone and sod dam across the outlet to form a pool. The barrier was covered with mosses and ferns. This small pool offers many opportunities for interrelated stories. Salamanders live nearby, beneath damp, flat stones and many plants grow both in and beside the water. Algæ, those mysterious plants so often referred to in textbooks, live there very well. To us an alga is one of the most storied of plants, (if least attractive in appearance). Its ancestors, eons and eons ago, were among the first of all objects to be possessed of life. What better possibility than here to send the visitor back to the museum for more knowledge! We will do so, promptly, and there on the interdependence table he will find a story of plant evolution, by

no means complete, but highly suggestive none the less. We provide him with a slight foreword before introducing the living algæ. This indoor plant exhibit follows the one of soils. The first label reads:

Plants

Plants lived upon the Earth before there were any animals. They present the first living step in our story of interdependence for they are dependent upon all that has gone before—upon sunlight, moisture, oxygen and in many cases, soil.

We are well aware of the fact that nowhere do our labels give detailed information. We also know that many children will view the exhibits. For persons who wish extended service and material there is this sign:

Note!

One of the aims of this exhibit is to arouse questions—many questions are here suggested. Please feel free to inquire at the office, where the person in charge will do his best to answer you. Books are there for your use, too.

The visitor is next told of:

Different Types of Plants

There are four great groups (phyla) of plants. Each group has its dependence upon outside factors or conditions.

1—Thallus plants
2—Mosses and Liverworts
3—Ferns and Fern Allies
4—Seed plants.

We are drawing close to the algæ now, for the next sign reads:

Thallus Plants

These plants have the simplest structure. To this group belong the *Algæ*, the *Fungi* and the *Lichens*.

In a small white tray filled with water, the visitor sees the same kind of growing green algæ that he encountered in the pool on the Acorn Trail. Here is the label:

Alga

These are thallus plants that contain chlorophyl and are able to manufacture their own food. Many seaweeds belong to this group. The one shown here is a fresh water alga.

PLANTS FROM LOW TO HIGH

Alga heads the procession here and is designated by the number 1. Then, in the order of their development, other plants lead on to the butter and eggs at the top, representing the flowering plants. It is a story of progression.

Now! If the label reader desires the specific name of the plant, which happens to be spirogyra, all he need do is go to the office ten paces away, where an attendant will come to his aid. If the word "chlorophyl" is confusing, it too may be discussed. The interdependence exhibit covers a tremendous field in order to give a cross section of plant and animal dependencies and relationships. There is no space to enlarge upon any single topic.

Near the Acorn Trail pool are some mushrooms growing upon a decayed stump. If the algæ-seeking visitor is further interested and carries his notes, he may refer to the exhibit again, for next to algæ is a tray of mushrooms accompanied by the following sign:

Fungi

These plants lack chlorophyl and are unable to manufacture their own starches and sugars. They live as parasites or saprophytes, being dependent upon other organisms for food. In this group are the mushrooms, yeasts, moulds, mildews, etc.

Next come other healthy plants, all described in the order of their classification. There are the lichens with perhaps the strangest tale of all, labeled thus:

Lichens

Lichens are fascinating plants that present a strange interdependency. In reality they consist of two types of plants living together. These partners are an alga and a fungus, each apparently dependent upon the other for existence.

Then we have the mosses, club-mosses, ferns, and finally seed plants illustrated by wood betony and this sign:

Seed Plants

Nearly all the conspicuous and familiar plants belong to this group. They include trees, flowers, weeds and grasses.

In the open fields, along the Acorn and other trails various plants are labeled as to species and individual story; but here they are grouped with one significant, all-embracing description. Here, the loose ends are caught together and woven into a single strand. In other years we developed similar features out-of-doors, but none so satisfactory as this one indoors where we are able to combine pictures and mechanical devices without fear of weather or other destructive agencies.

Division

After the plants comes a sign reading "Division" and then the parade of the animals commences in a series similar to all that goes before. First:

Animals

All forms of animals are dependent, directly or indirectly, upon plant food and upon the sun, moisture, oxygen, etc., that give life to plants.

Repetition! Yes, of course. A story as powerful as this will bear repeating here and there, to drive it home—to place emphasis where it is needed. The main theme of the song occurs again and again throughout the composition as a reminder of the source, and as a thread to bind the units, one to another. The entire exhibit, modest though it may be in physical equipment, is a symphony of life that arises in gradual but increasing crescendo to a climax represented by Man's emergence from the background of the past.

Animal Entrance

The animal sequence commences with the highly important but retiring earthworm. We did not think it necessary to start lower down the scale to serve our purpose. At the very beginning, and throughout this series, we stress the far-reaching influence exerted by creatures upon their environment whenever an example may be cited. Beneath the living and working earthworm is this caption:

Earthworms

The familiar earthworm belongs to the group of segmented worms. It is dependent upon tiny particles of dead plant and animal matter passed through its body with soil fragments. Earthworms are of real assistance to farmers and more than "earn" their "keep" because they are "plowers" of soil. Charles Darwin found that in some instances, earthworms deposited *eighteen tons* of soil upon the surface of one single acre of ground in one year!

This animal parade with the humble earthworm as leader is in the reverse order of most processions, for the most exciting and prominent figure is in the rear, led onward by his less exalted brotherhood. Following the leader are collections of millipedes, centipedes, crayfish, land

snails, spiders, and insects. On a raised platform, indicative of higher rank, are the vertebrates—earth citizens with backbones. The fish are first and then come the amphibians, reptiles, birds, and mammals, with a clever little white-footed mouse as the bright-eyed symbol of his class. This mouse with perpetually inquisitive whiskers has the happy habit of exercising in a revolving wheel where all may watch. The two-legged visitors stand at the top and are free lance specimens of "*man*," actively

ANIMAL SECTION

Commencing with living earthworms, in glass containers at the lower left, this section of the Interdependence Exhibit continued on, stage by stage, to the mammals. Pictures in the rear showed various types of interdependence. At the upper left, for instance, a quail is feeding upon berries and a weasel is about to pounce upon the quail. We might have carried this on *ad infinitum* by having a great horned owl snatch up the weasel etc., etc.!

and personally representing the topmost rung in our exhibits of progressive interdependence. We are enabled to maintain living examples throughout! How attractive and moving would be many of the conventional "trees of life" if some of the branches were alive! Our budding "tree," though it lacks numerous limbs (and some of these are weak), at least is alive.

One of the outstanding features of nature trails and trailside museums of natural history is the ever present appeal of life itself in countless forms. Any project undertaken in connection with the work should also involve life, if the entire scheme is to be consistent. The only thing that amazes us in thinking of our living story is, Why have we not developed this exhibit before? The entire program is such an obvious one! Its expression in a completed form automatically prevents

Life

JIM AND PETER

Peter, the young flicker was every bit as tame as Jim the crow. He would fly and hop about, alight on visitor's shoulders and generally delight everyone who saw him. Jim could easily have been jealous; perhaps he was!

the placing of unwarranted emphasis or stress upon any one phase of nature.

We know that snakes attract the greater number of people. As a general thing visitors will spend ten minutes before the snake cages for every minute of time devoted to insects or amphibians or plants. In reports of other years we have spoken of this. While we have never given reptiles undue prominence, we have, none the less, catered to public demand for them. Insects and fish, too, have been given considerable space; but this year for

Snakes Subordinated

the first time, all of our museum exhibits are balanced. Each one is given its logical and deserved space and place. Each one has a niche of its own and a suitable one at that. The orderly design of the interdependence exhibit is responsible for this equally orderly arrangement. Every plant and animal has its particular part to play in the drama we have staged. No one actor has been cast in the role of "star!"

We built the exhibit through the Spring months to insure readiness

TRAILSIDE MUSEUM VIEW

The Interdependence Exhibit is seen on the right side in the background. It occupies about one fourth of the museum table space. All other displays are related to it, directly or indirectly.

when July and August arrived and the critical test should be at hand. This test, as always, is the reaction and opinion of our visitors. Various leaders of natural science education from widely separated parts of the country dropped in upon us from time to time to tell us that we were on the "right track." We were pleased and encouraged by this approval but realized that the real value of the exhibit rested with the popular acceptance of the public.

In discussing this latter reaction we must first tell something of the

visitors themselves, for during the current year, they presented an unusual problem. We were hosts to greater numbers than ever before; and furthermore, the majority were decidedly of a more interested type than the average visitors of previous seasons. There were several reasons for this gratifying influx. The much heralded and highly obvious depression was foremost. People who had formerly possessed sufficient means to enjoy extended summer sojourns were now forced to restrict their vacation wanderings. Instead of going to Europe, to the western states, to Canada or elsewhere they found it advisable to stay at home and confine their travels to day and week-end trips. Our guest book recorded the signatures of metropolitan dwellers, many of whom had never previously availed themselves of inexpensive means of transportation and had consequently neglected the country at their own door. Revealing comments overheard both accidentally and in direct conversation proved conclusively the truth of this assertion.

Depression Attendance

All in all, we were visited by a representative cross section, not alone of Greater New York City dwellers, but of a traveling public from practically every state in the Union, rolling along in automobiles that often taxed the capacity of our parking space. More than three hundred thousand persons walked our trails and entered our museum, bringing our six year total to over one million persons. Yes, we certainly had sufficient opportunity to observe reactions!

From the first, it was evident that the exhibit's principal attraction lay in its animation. There were fish swimming about, water newts wriggling, and spiders spinning. In the plant section were ferns and other growing plants. A small brass chain linked the groups, and a white string with many little arrows gave eye direction from one end to the other. Many persons, of course, merely examined the separate plants and animals. Nevertheless, a large percentage grasped the exhibit's significance and followed it as we desired. Many fathers or mothers accompanied by children paused, read the labels aloud and, far better, told some of the story in their own way.

I remember one camp nature councilor who came to the museum office and thanked us for the exhibit. She confirmed our ideas by saying:

"For the first time I've been able to follow a museum outline of nature-lore and use it for my group. We could move the entire exhibit to camp and spend many summers filling in the gaps."

She agreed with us that it was in effect an assembled jig-saw puzzle rather than one with pieces scattered about.

Many camp groups with leaders came to us during the season. Some made weekly visits. A number came from distances of more than fifty miles. Invariably they used the interdependence tables as a keystone for the support of other teaching efforts.

We have observed for some time that there is a growing tendency to swing away from the merely spectacular in nature and to appreciate the underlying basic stories of more lasting importance. Camp directors

NEW TRAIL BULLETIN

In the center of this sheltered trail sign is a covered container displaying water newts. Labels tell of similar exhibits in the Trailside Museum. This bulletin board is alive!

tell us that they no longer employ nature teachers who are content to excite children's interest with snakes and other obvious and easily taught lessons, alone. They are sincerely anxious to send children home with the consciousness that nature reveals its greatness and mystery in modest, unobtrusive ways and needs no "bally-hoo" exponent to advertise its charms.

We, too, have seen the value of dignity and of straightforwardness in honest nature presentation. In our attempt to teach progressively, we have tried to recognize that clarity and unity are paramount, and

that the simpler the method, the more easily the lesson is brought home. After all, we are but stage hands struggling to part the curtains as far as possible that Nature, herself, may take the stage. She is perfectly capable of taking full charge, once introductions and interpretations have

ACORN TRAIL LABEL

Numbers, placed upon staves, refer to nearby plants usually indicated by a string connection from number to stem. Visitors are provided with guide sheets. In this way comprehensive stories are told though the labels are small—two inches square to be exact.

been made. We have occasionally used bright colors in our labels to express a warmth of feeling rather than an incessant clamorous demand for attention. Never have we prepared an exhibit better suited for direct instruction than the story of interdependence, and it is a story quietly told.

Among other guests this season was an extremely fine group of blind women and girls from a camp just outside the Interstate Park border. They arrived one sunny morning and stayed for several hours. We escorted them to our Crafthouse and there spoke of the aims of our work and told of some of the things to be "seen" along the trails. On our way to the museum one totally blind young woman quickly learned to identify nine species of tree leaves. She easily remembered facts about each one and later shared her knowledge with the little girls who were in her immediate charge. We discussed trees while walking and stopped frequently to select leaves for the children.

A Nature Trail for the Blind

APPALACHIAN TRAIL MARKER ON THE NATURE TRAIL

A short section of the Appalachian Trail, from Maine to Georgia, was rerouted to include the Bear Mountain Nature Trail area. This brought many hikers to the museum.

The group paused at the museum door while we briefly summarized the exhibits. At once, they wished to handle everything from salamanders to snakes. They were quickly convinced that the amphibians had smooth skins whereas the reptiles had scales—delicate touch discovered this instantly. We were extremely busy for awhile. Snakes were carried about joyfully; turtles were examined and waved their stumpy legs about in futile protest; salamanders inched across inquisitive, sensitive, outspread palms while rapid fire questions came from every side. Eventually the group quieted and we directed several leaders to the interdependence tables and described the objects. The idea "caught" instantly and questions arose once more. As our blind guests became more interested, so did our interest in them increase in like proportion. In the end we agreed to visit their camp and talk to all members.

Several weeks later we kept our promise and spent a delightful afternoon at the camp which proved to be more in the nature of a

private estate. While there, under the guidance of the camp directors, we were shown some splendid trees and other plants, and we conceived the idea of building a nature trail for the camp. A path was later marked by members of our staff, and labels were prepared. These were "printed" in Braille on brass sheets and affixed to trees. We suggested that upright posts be placed beside the trail opposite each label for the purpose of holding string or cord that would run back to the labels and thus serve as guides for searching fingers. It was a revelation to us to observe how expertly the blind campers walked about, but we did feel that label guides would be of assistance.

In making leaf collections for future reference, the blind group discovered that, due to drying, the leaves would crack and break when handled. When we were informed of this we made plaster casts of leaves in bas-relief and they proved quite useful as permanent aids to identification.

One reason for our interest in these blind people was because their own human dependence upon and response to nature out-of-doors was so different from ours. Their sense of hearing, for example, was remarkably keen and all their other faculties seemed sharpened to offset as much as possible the lack of vision. Nature was by no means a closed book to them and we were happy, indeed, to be permitted to increase their opportunities for further understanding.

PETER POSES

Our infant flicker was one of the most attractive pets we ever kept. He was allowed perfect freedom and came and went as he pleased all day long At night we usually placed him in a cage for safety.

As the months have advanced and the Hudson River boats no longer make daily voyages to the Bear Mountain docks, we have considered the improvement of our interdependence exhibit for next year. We are well aware of many of its shortcomings, and realize that to build it properly we shall have to extend it considerably.

As this is being written, it is the time of scarlet and brown leaves

on the slopes of Bear Mountain. The museum door is bolted on the inside. The human assistants have gone and all is well until next Spring. Only Jim Crow remains; a somewhat lonely Jim, trotting about seeking companionship and lending an attentive ear to wild crows calling down in the Acorn Trail valley. He has been a loyal co-worker throughout the season—a perfect assistant. And he is to have his reward, for no less a person than Daniel Carter Beard, the "Dan Beard" known to all American boys, is to care for him during the Winter. Our hope is that he may return next year to continue his nature trail education and ours, and to aid with reports yet to come.

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